



ABSTRACT OF THE DISCLOSURE

A network apparatus establishes complete crossbar contact for N basic elements each having the capability to function as one computer. A switch device group having N switch devices is connected to each basic element. Each switch device group is composed of a first switch device that is connected directly to a basic element, a second switch device that is connected to the first switch device, a third switch device that is connected to the second switch device, and so on to a final Nth switch device that is connected to an (N-1)th switch device. The network apparatus includes N loop lines, each loop line connecting one switch device in each switch device group in a loop without duplication. A basic element and a first switch device are bidirectionally connected for input and output of data, and each of the switch devices that make up a switch device group are unidirectionally connected for transferring data in one direction toward the first switch device.

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